SOLICITATION FOR APPLICATIONS FOR

COOPERATIVE AGREEMENTS REGARDING

SOIL CHEMISTRY ISSUES IN THE DEVELOPMENT OF ECOLOGICAL SOIL

SCREENING LEVELS

JUNE, 1998

NATIONAL CENTER FOR ENVIRONMENTAL ASSESSMENT -

WASHINGTON DIVISION

OFFICE OF RESEARCH AND DEVELOPMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NCEA-W RESEARCH SOLICITATION #98-01

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NCEA-W RESEARCH SOLICITATION

1.0 INTRODUCTION

The United States Environmental Protection Agency's National Center for Environmental Assessment - Washington Division (NCEA-W) operates under the Office of Research and Development (ORD). NCEA-W is issuing this "Request for Applications" (RFA) for Cooperative Agreements to conduct research related to the effects of soil chemistry parameters on the lability (availability, solubility, exchangeability) and toxicity of chemical contaminants of soil. The primary purpose of this RFA is to improve the knowledge base to elucidate qualitatively and quantitatively the primary soil parameters controlling the lability and toxicity of chemicals in soils. The goal is to develop models and/or methodologies to support screening levels and site specific requirements for chemical contaminants in soil. Theoretical, site-specific data and laboratory bench research will be considered as a means toward the validation of proposed methodologies or models. NCEA-W intends to establish two or more collaborative research relationships with eligible parties with the primary purpose of supporting or stimulating ecological risk assessment research.

While the value of the cooperative agreement research awards represented in this document depends on future Congressional appropriations for EPA's research programs, the awards are estimated to range from $100,000 to $200,000 total over a period of two (2) years depending upon funding availability. Applications must be postmarked, dated by a delivery service or marked received by NCEA-W personnel by **August 21, 1998**. Applications will be thoroughly reviewed and evaluated by guidelines as set forth in this document. Interested parties are invited to submit a competitive Cooperative Agreement Application, including a full and detailed project application for funding consideration. The availability of this solicitation document was announced publicly on June 23, 1998 in the Commerce Business Daily. The EPA reserves the right not to make any awards from this solicitation.

This document, sent to you in response to the national solicitation, provides information about NCEA-W's research mission, the research area for which applications are being solicited, the competitive process for awarding cooperative agreements, and the preparation of applications (see the Table of Contents on the pages preceding this section). We urge that you read and consider carefully the information presented in these sections before preparing an application.

2.0 BACKGROUND INFORMATION

NCEA-W, in partnership with the National Center for Environmental Assessment offices in Cincinnati, OH and Research Triangle Park, N.C., is a center for leadership in the evolution of ecological risk assessment science and research by producing guidelines, procedures, and tools to support customers within the EPA and to the environmental scientific community.

3.0 RESEARCH FOR WHICH APPLICATION IS BEING SOLICITED

3.1 Background

Ecological risk assessments are valued tools for evaluating potential risks at hazardous waste sites. Currently there are no peer-reviewed, ecologically-based, screening levels for soil. The absence of these, and a process to develop them, is problematic both to EPA, other federal agencies, states, and responsible parties.

One of the first steps in an ecological risk assessment is the screening of potential chemicals of concern, measured in the media of interest and compared to a predicted exposure believed to pose little or no ecological risk. Those contaminants found at concentrations below these accepted exposure levels are removed from further evaluation. This screening step helps to streamline the process. Where chemicals are above these accepted exposure levels, they are evaluated further in the ecological risk assessment.

Soil chemistry parameters are important factors in estimating the availability or toxicity of chemical contaminants of soil. Research to identify and characterize the predominant soil parameters that effect the lability (availability, solubility, exchangeability) and/or toxicity of individual chemicals or groups of chemicals supports the generation of soil screening levels and site specific requirements.

The chemicals to be addressed have been divided into Group I - organic compounds and Group II - metals. Applications are encouraged to address most or all of the chemicals listed in either Group I or Group II.

Chemical groupings: Group I. DDT, PCBs, dieldrin, Pentachlorophenol (PCP), Polyaromatic hydrocarbons (PAH), Total Petroleum hydrocarbons (TPH), Trinitrotoluene (TNT), RDX (an explosive)

Group II. As, Cd, Cr, Pb, Al, Ba, Ag, Fe, Cu, Ni, Se, Zn

3.2 Research Areas of Interest

NCEA-W is interested in collaborating on several areas pertaining to soil chemistry parameters and their effects on the lability (availability, solubility, exchangeability) and toxicity of chemical contaminants. Addressing complex soil chemistry issues is an important part of any process in the development of ecological soil screening levels and site specific requirements for Superfund and NPL sites. Research on soil chemistry parameters is critical to provide scientific support to develop soil screening levels for ecological receptors and to provide refinements for application to site specific requirements.

The chemicals under consideration are grouped into organic compounds and metals.

Chemical groupings: Group I. DDT, PCBs, dieldrin, Pentachlorophenol (PCP), Polyaromatic hydrocarbons (PAH), Total Petroleum hydrocarbons (TPH), Trinitrotoluene (TNT), RDX (an explosive)

Group II. As, Cd, Cr, Pb, Al, Ba, Ag, Fe, Cu, Ni, Se, Zn

For the chemicals selected for evaluation, soil parameters (2-3 for each chemical) have been put forward, for initial consideration by investigators, that predominantly effect their lability (availability, solubility, exchangeability) in soil. An initial matrix using ranges of these parameters and qualitative (high, medium, low) ranges of lability is presented below. Theoretical and laboratory investigations are required to refine and validate the specific soils parameters and their appropriate ranges in the matrix. Where appropriate, models relating soil chemistry parameters to chemical lability or toxicity in soil would be developed. Research issues include: confirmation/validation, model generation, conducting direct toxicity tests in soils, evaluation and identification of compounding issues, and consideration of the application to assessment endpoints, such as soil biota, plants and vertebrates.

Soil Conditions and Lability of Inorganic Chemical*

Soil Type	Chemical Type	Soil pH		
		< 5.5	5.5-7	> 7
Low OM (< 2%) Low CEC (< 50 mmol/kg) Low clay content	Inorganic cations (metals)	" " " " "	" " " "	" " "
	Inorganic anions	" " "	" " " "	" " " " "
Medium OM (2% - 5%) Medium CEC (50 - 500 mmol/kg) Medium clay content	Inorganic cations (metals)	" " " "	" " "	" "
	Inorganic anions	" "	" " "	" " " "
High OM (> 5%) High CEC (> 500 mmol/kg) High clay content	Inorganic cations (metals)	" " "	" "	"
	Inorganic anions	"	" "	" " "

Areas of emphasis include:

1. Soil Parameters. Determine soil characteristics that predominantly impact lability (availability, solubility, exchangeability) of chemicals in soil. For each chemical or approved groupings of compounds, the investigator will conduct theoretical and laboratory investigations on soil chemistry parameters (i.e. pH, cation exchange capacity, percent organic matter, clay content, etc.), to refine and validate the specific soils parameters and their appropriate ranges which are primarily responsible for chemical lability in soil. Initial results may be in a matrix format or relationships can be modeled.

2. Address other issues that impact the lability (availability, solubility, exchangeability) of chemicals in soil.

   - Time: relationship of time vs. availability; methods to mimic weathering

   - Labile compounds: extraction methods, soil pore water issue

   - Nutrient requirements: Evaluate nutrient requirements for plants and animals as minimum levels of micronutrients in soils

   - Concentration: capacity of soils to bind contaminants and quantity/intensity relationships

3. Relate soil chemistry and toxicity to organisms: Conduct soil biota toxicity tests to evaluate the relationship of labile (available, soluble, exchangeable) concentrations of chemicals in soil as it relates to toxicity to plants and soil biota.

4. Develop methods/models to estimate site-specific labile (available, soluble, exchangeable) concentrations for use with specific soil parameters.

5. Relate the bioavailability of chemicals in and across the gut of vertebrates to variations in soil chemistry (lability).

3.3 Areas of Collaboration and Possible Collaborators

A brief list of topic areas for possible collaboration is as follows: refinement and validation of matrix, relating soil chemistry parameters to soil biota toxicity, model development for site specific application, and vertebrate endpoint bioavailability issues. NCEA-W can provide assistance in many areas associated with ecological risk assessment, risk assessment research, environmental toxicology, and state-of-the-practice issues for hazardous waste sites.

4.0 FUNDING

4.1 Eligibility

NCEA-W intends to establish two or more collaborative research relationships with state and local governments, nonprofit research institutions of higher education, individuals, or nonprofit research organizations with the primary purpose of supporting or stimulating ecological risk assessment research. Applicants must be eligible to receive Federal Assistance under the CERCLA: Section 311 and the Resource Conservation and Recovery Act (RCRA).

4.2 Award Value

While the value of the cooperative agreement research awards represented in this document depends on future Congressional appropriations for EPA's research programs, the awards are estimated to range from $100,000 to $200,000 total over a 2-year period depending upon funding availability.

4.3 Period of Performance

The U.S. EPA Award Official in the Grants Operations Branch is responsible for issuing the final award for the cooperative agreement. No costs should be incurred before the award agreement is issued. Funding to begin research under the cooperative agreement will not be available until after the award is made. Awards will be expected to begin in late FY-98 (September, 1998) or early FY-99 (October-December, 1998), with the start date to be determined by the Award Official. Assistance under this agreement will be provided for up to two years pending availability of resources.

5.0 ORD POLICY ON COOPERATIVE RESEARCH AND AWARD OF COMPETITIVE COOPERATIVE AGREEMENTS

5.1 Use of Cooperative Agreements

In preparing applications in response to this solicitation, applicants should consider the following relevant ORD policy with respect to the use of cooperative agreements. U.S. EPA funds extramural projects through both assistance and acquisition mechanisms. By statute (31 USC 6305),

> "An executive agency shall use a cooperative agreement as the legal instrument reflecting a relationship between the United States Government and a State, a local government, or other recipient when:

(1) the principal purpose of the relationship is to transfer a thing of value to the State, local government, or other recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring (by purchase, lease or barter) property or services for the direct benefit or use of the United States Government; and

(2) substantial involvement is expected between the executive agency and the State, local government, or other recipient when carrying out the activity contemplated in the agreement."

Cooperative agreements may not be used as a mechanism to acquire goods or services for the direct benefit or use of the Federal government where a type of procurement contract is the appropriate instrument (31 U.S.C. 6303 (3)).

ORD is authorized under various statutes to conduct research and development in different areas of environmental science. It is ORD's policy that such research is appropriate for assistance agreements when the primary purpose of such research is to "carry out a public purpose of support or stimulation" as stated in 31 U.S.C. 6305.

Consequently, the research project areas described in this solicitation are distinguished by being primarily in support of U.S. EPA's broad research and development mission, and are distinguished from other projects in the laboratory whose primary purpose is to deliver a required product for another U.S. EPA office. Products or services procured primarily for the direct benefit of another U.S. EPA office or for ORD scientists in conducting research and development, (e.g., analytical services, ADP support, and supplies) are inappropriate for acquisition through assistance agreements. Incidental development of products of use to ORD or a program office does not, in itself, preclude use of a cooperative agreement.

Cooperative agreements anticipate substantial involvement of U.S. EPA personnel in the activity contemplated by the agreement. This involvement may include:

- collaborative participation in the design, conduct, and interpretation of research activity;
- negotiated changes in direction of effort with the project;
- in-kind provision of services and/or equipment; and
- co-publication

The specific type and extent of U.S. EPA involvement in the cooperative effort will be defined explicitly in the agreement.

While cooperative agreements are to include substantial involvement as described above, specific limitations are placed on the U.S. EPA's involvement.

(a) Key Personnel - The professional qualifications/skills of key personnel (positions) should be designated in the cooperative agreement. The agreements shall state that U.S. EPA shall have the right of review and concurrence in the qualifications of personnel proposed to fill these positions. Becoming involved in the formal personnel processes of cooperating parties is inappropriate for U.S. EPA personnel.

(b) Supervision of Cooperator Personnel - In order to sustain the collaborative relationship anticipated by the cooperative agreement and sustain effective cooperator management, U.S. EPA personnel shall not supervise or direct the day-to-day activities of cooperator personnel.

(c) Contracting Under Cooperative Agreements - Use of contractors by cooperators is authorized; however, the role and cost of subcontracts must be clearly identified in advance in the cooperative agreement. The U.S. EPA personnel shall not be involved in selection or direction of subcontractors.

(d) Project Officer Role - Within the scope of collaboration anticipated in the cooperative agreement, the U.S. EPA project officer is responsible for assuring compliance with technical and management requirements, including peer review of publications, quality assurance procedures and documentation, key personnel and other special conditions, and periodic assessment of progress toward the stated objectives of the agreement.

5.2 Competition

It is ORD policy that, to the maximum degree feasible, opportunity to compete for the award of cooperative agreements will be afforded to all qualified scientific institutions or researchers. Solicitations are to be structured to provide both full and open opportunity for competition, and to ensure that a reasonable likelihood exists for applications to be submitted by more than one respondent.

Published solicitations for Applications for competitive cooperative agreements shall include discussion of the type and extent of U.S. EPA planned involvement in the assisted activity, the criteria to be employed in evaluating application and a discussion of the process for evaluation and decision. Decisions related to evaluation, ranking, and award of research cooperative agreements shall be fully documented, including criteria for evaluation, results of evaluation, and the basis for the award decision.

Applications submitted in response to a U.S. EPA competitive solicitation will not be considered if the proposer asserts a claim of confidentiality of information contained therein, unless explicitly allowed in this guidance.

The collaborative nature of the cooperative agreement process makes it appropriate for the project officer to negotiate the final form of the agreement with the principal investigator. However, to avoid giving an unfair competitive advantage to any applicant, it is important that the negotiation step not occur until all competitive applications have been reviewed and ranked and the decision official has made a tentative selection of the successful applications. Until that time, all Federal employees must avoid providing any information to any applicant that might confer an unfair competitive advantage. This does not preclude formal procedures for providing written comments back to applicants on applications or any other formal procedure that systematically treats all applicants equally.

The general U.S. EPA policy on peer review provides the framework for ORD specification of peer review requirements. Peer review of major competitive solicitations is desirable. Peer review of Applications for funding submitted in response to competitive solicitation is mandatory.

6.0 INFORMATION FOR INVESTIGATORS PREPARING APPLICATIONS

This section contains information of importance to research investigators preparing cooperative agreement full Applications. Information about the full application process and application forms are found in the "Application Kit for Assistance." They can be requested from the EPA contact person at the address in listed in section 6.2 or by calling 202-564-3263. Solicitation packages can be found on the NCEA Web site http://www.epa.gov/ncea/. Additional general information about legislation and regulations for assistance programs can be found in the Federal Register (Friday, September 30, 1982, Part VIII, pages 45056-45076) or in the Code of Federal Regulations (40 CFR 30). Internet sites: www.whitehouse.gov/wh/EOP/OMB/GRANTS/ and www.epa.gov/ogd/regs.htm

6.1 Review Criteria

The following criteria (with the quantitative weight for each criterion given in parenthesis) will be used in the review of applications:

A. Qualifications and Commitment of Key Personnel (15)

1. Evidence of academic qualifications (B.A., M.A., Ph.D., etc.), institutional standing (professorship, senior researcher, etc.), professional qualifications (certified industrial hygienist, etc.), recent experience (participation in Science Advisory Board reviewed programs, previous cooperative agreements or grants, etc.), and past accomplishments (publications, books, peer-review panel selections,

etc.) of the principal investigator and key personnel relevant to the proposed research area. (10)

2. The organizational structure and time commitment of the principal investigator and key personnel to support proposed research. (5)

B. Administrative Capability (10)

1. The ability of the investigators to provide technical support, facilities, or equipment relevant to the successful completion of the research. (5)

2. Evidence of quality control/quality assurance mechanisms for implementing and tracking the administrative components of the research. (5)

C. Scientific Merit (30)

1. The extent to which the application demonstrates an understanding of the state of the science in the proposed research, and the contribution of the principle investigator's approach to advancing the state of the science. (15)

2. The scientific merit of the proposed approach to answering the research questions posed in the research including soundness of fundamental scientific and technical approaches, and consideration of unique or innovative approaches evident in the application. (15)

D. Relevance to the advancement of the understanding of effects soil chemistry parameters on the availability (solubility/exchangeability) and toxicity of chemical contaminants. Research on soil chemistry parameters is critical to provide scientific support to develop soil screening levels for ecological receptors and to provide refinements for application to site specific requirements. (20)

1. The extent to which the proposed research provides a public benefit through the advancement of the understanding of chemical availability and toxicity as related to soil parameters through methodology and model development. The extent to which the research envisions improving and expanding the understanding of environmental science by using the anticipated research results. (20)

E. Collaboration between the Research Investigators and NCEA-W (10)

1. The extent to which the application provides for collaboration and/or consultation with NCEA-W in the design, analysis, interpretation, and publication phases of the proposed research. Collaboration with NCEA-W should be stated by

area of expertise (see Section 3.2), not by naming a specific researcher. (10)

F. Research Quality Assurance/Quality Control and Budget (15)

1. The extent to which the application documents planning for quality assurance/quality control management of research activities and progress, computer security and accuracy (if applicable), and staff supervision and integrity. Further information on quality management can be found in the American National Standards Institute document entitled, "Quality Management and Quality System Elements -- Guidelines" (ANSI/ASQC Q94-1987). (10)

2. The adequacy of the proposed budget (total dollar estimates over the proposed time period for applications) to achieve the proposed research objectives. (5)

6.2 Submission of Full Applications

One original and five copies of each full application must be submitted. Completed applications that respond to this solicitation must be mailed by regular, priority, or express U.S. Mail or delivered by other delivery service, and received at the following address on or before the deadline indicated in the assistance package:

David Kelley
U.S. Environmental Protection Agency
NCEA (MS-8623D)
401 M St. SW
Washington, DC 20460

Delivery service address: US EPA/NCEA (8623D)
808 17th St. NW, Suite 400
Washington, DC 20074

Applications that are postmarked, dated, or marked received after the deadline will not be considered.

6.2.1 General Application Description

The project narrative section of the application must not exceed thirty-five 8 1/2 x 11-inch, consecutively numbered pages of standard type (10-12) characters per inch), including tables, graphs, and figures. For purposes of this limitation, the "project narrative section" of the application must include all of the following items:

(1) Description of Project

(2) Objectives
(3) Results or Benefits Expected
(4) Research Support and Stimulation
(5) General Project Information
(6) Collaboration with NCEA Staff
(7) Relevance to Research
(8) Quality Assurance Narrative

Items 1,2,3, and 5 are described in the Application/Information Kit. For this specific solicitation, items 4, 6, and 7 must be included in the project narrative section. Since the primary purpose of this assistance is to "carry out a public purpose of support or stimulation," please address specifically under item 4 how this assistance will support and stimulate societal environmental research programs and accomplish a public purpose.

Proposers will observe Review Criteria in Section 6.1 with the assistance package and should prepare the application in such a way as to ensure that reviewers will be able to address the review criteria. Each application must also include an item (8) Quality Assurance Narrative Statement as described in Section 6.4.3. Another 5 pages may be used for this section.

Attachments, appendices, and reference lists for the narrative section may be attached, but are included in the 35-page limitation. Additional items not included in the 35-page limitation are the SF-424 and other forms; budgets; resumés; the abstract; and the cover sheet. The cover sheet must contain the following information:

1) Title of the application
2) Name of the institution or individual
3) Mailing address for disposition of the application
4) Name, phone, fax and e-mail information for the principal investigator

Resumés for each principal investigator should focus on education, positions held, relevant experience and accomplishments, and most recent or related publications. Itemized budgets, including justifications, must not exceed five consecutively numbered pages (excluding budget information on SF-424.) Applications not meeting these requirements will not be evaluated.

All Applications received by the due date will be date-stamped and reviewed to ensure that all forms and documents have been appropriately prepared. Correspondence will be sent to each applicant submitting a application confirming receipt of the application. Incorrectly prepared forms and inadequate documentation can be grounds for rejection of the application from the evaluation process, and from subsequent consideration for funding.

6.2.2 Substantial Involvement of EPA Scientists in Cooperative Agreements

Section 2.2 of this document emphasizes the importance of collaboration in cooperative agreements. The fundamental role of collaboration with U.S. EPA scientists in the research activity contemplated by the agreement makes the cooperative research mechanism a distinctly different one from a grant mechanism, in which no collaboration is permitted. Examples of substantial involvement with U.S. EPA scientists include: (1) collaboration in the design, measurement, analysis, and interpretation of the research activity; (2) collaboration in publishing articles or reports about the research; (3) collaboration in negotiating changes in direction of effort within the project, and (4) in-kind provision of facilities or equipment.

6.2.3 Quality Assurance Requirements

As indicated in U.S. EPA General Regulations for Assistance Programs (40 CFR 30.503), all applicants seeking financial assistance from U.S. EPA must submit with their application one of the following pieces of quality assurance (QA) documentation: Quality Assurance Narrative Statement, Quality Assurance Program Plan or Quality Assurance Project Plan. As part of the application that responds to this solicitation, each applicant must prepare a modified Quality Assurance Narrative Statement. This QA Narrative must discuss each of the quality elements listed below in the context of the research being proposed and any laboratory managing and performing analysis for the proposed research.

Additional information about the quality elements can be found in the American National Standards Institute document entitled, "Quality Management and Quality System Elements -- Guidelines" (ANSI/ASQC Q94-1987). The quality elements of interest with respect to this solicitation are:

1. Quality Management

   - Quality Policy
   - Quality Objectives
   - Responsibilities and Authority

2. Structure of Quality Systems

   - Quality Organizational Structure
   - Resources and Personnel
   - Operational Procedures
   - Quality Manual
   - Record keeping Policy
   - Measurement and Test Equipment Controls
   - Review and Evaluation of Quality Systems

U.S. EPA General Regulations for Assistance Programs (40 CRF 30.503) require successful applicants to develop and implement a Quality Assurance Program which is acceptable to the award official to receive a U.S. EPA Assistance Award. The quality Assurance Narrative Statement must be approved by U.S. EPA prior to award as being adequate to ensure that the organization is capable of preparing an acceptable Quality Assurance Project Plan (QAPP). While QAPP is not required as part of the application to be submitted for this competition, a QAPP must be prepared by those research organizations with Applications selected for awards and submitted to the EPA Project Officer for approval within 30 days after award, and before initiating data collection activities.

6.3 Review of Full Applications

NCEA-W seeks to balance scientific merit, relevance to the advancement soil chemistry parameters related to ecological risk assessment and opportunity for collaboration with EPA scientists in awarding cooperative agreements under this solicitation. The review and award process attempts to strike a balance between these three objectives, as well as insuring fairness, flexibility, and accountability in the authorization of government expenditures.

The Review Panel for the applications will be composed of approximately two EPA scientists and one non-EPA scientist selected for their expertise in the research area. The most important criteria for award will be scientific merit and relevance to the advancement of exposure assessment science. (See Section 6.1 for description of criteria and weights.) The panelists will be required to certify that no conflict of interest is created through the individuals' participation in the panel or review process, and that the individual will not benefit, personally or financially, either directly or indirectly, from any aspect of participation in the review process. Panel members will not be permitted to discuss or retain applications after the completion of the review process.

The reviewers will provide both a numerical score and a written evaluation of the application. The Review Panel, then, will discuss and compare all final Applications, including considerations of the review criteria, all reviewers' comments, funding availability, and NCEA-W scientific staff expertise and time commitments. The Review Panel will prepare a written report of this process and make final recommendations as to acceptability for funding.

6.4 Selection of Applications by Decision Official

After Review Panel recommendations are finalized in report form, the applications will be submitted to the designated Federal decision-making official for final funding decisions. For each application, written evaluations and scores will be provided. The decision official will select the most meritorious application or applications, based on the panel recommendations. This will not necessarily result in the highest-scored application receiving an award because of possible duplication and differences among the scoring criteria and among reviewers. The decision official also will provide written documentation explaining the final decisions.

After the selection process concludes, a application's Grant number, together with its written and numerical evaluations will be retained in a file by NCEA-W. Names of panel members will not be available and will not be in the information included in the file. At this point also, a letter will be sent to each applicant that submitted a application that indicates whether the application is being considered for funding.

6.5 Negotiating a Final Cooperative Agreement

Following selection of applications for funding, negotiations will begin to develop a final cooperative agreement package. At this point, competition is concluded and all restrictions on discussions with NCEA personnel are removed. Final issues to be negotiated include the selection of a U.S. EPA collaborator as project officer, final budgets and terms of the agreement, response to reviewer's comments, final arrangement for Quality Assurance including submission of a Quality Assurance Project Plan (QAPP) and other conditions. The purpose of the final negotiation step is to implement the Applications that are selected in the competitive process described above. Care will be taken to avoid making changes to the cooperative agreement that might have significantly affected the outcome of the formal review process, or the evaluation of the application by the Review Panel.

6.6 Award Process

The U.S. EPA Award Official in the Grants Operations Branch is responsible for issuing the final award for the cooperative agreement. No costs should be incurred before the award agreement is issued. Funding to begin research under the cooperative agreement will not be available until after the award is made. Awards will be expected to begin in Federal FY-98 or FY-99, with the start date to be determined by the Award Official.

6.7 Project and Budget Periods

Generally ORD limits cooperative agreements to a project period of three years. Normally, funding is provided each year for a one-year budget period. However, no more than two year's funding may be provided at any one time. The recipient must submit continuation Applications for each additional funding period (budget period). The application should provide a budget for each year. Cost categories should include: personnel, fringe benefits, travel, equipment, supplies, contractual services, other, total direct costs, and indirect costs.

6.8 Other Information to Applicants

6.8.1 Peer Review of Publications

EPA regulations (40 CRF 30.518) encourage publication of the results of cooperative research agreements. Reports and informational material prepared under the cooperative

agreement must be submitted to NCEA for peer review prior to publication. Cooperating authors must give consideration to any peer review comments from this review. If NCEA does not approve publication clearance for the reports or other material, then the cooperating party may publish the work, providing the publication includes the appropriate disclaimer statement. This requirement for peer review extends to publications based on research conducted during the period of performance even if the publication is prepared after the completion of the performance period.

In contrast to reports and informational material, journal articles which are prepared under the cooperative agreement without collaboration and co-authorship of NCEA-W scientists may be submitted directly for publication to a refereed journal at any time. In this instance, the researcher must submit one copy of the article to the NCEA project officer when it is transmitted to the journal, and three copies of the article after it is published. Conversely, journal articles prepared with NCEA-W scientists as lead authors or coauthors must be submitted to NCEA-W for peer review and clearance prior to submission to a journal.

6.8.2 Communication with EPA Employees During Competition

During the period of competition for cooperative agreements, it is illegal for any Federal employee to knowingly provide, or for a potential competitor to solicit, information about a cooperative agreement that could confer an unfair competitive advantage to the recipient of such information. To reduce both the potential for inadvertent communication of such information, and the appearance of conferring unfair advantage, it is ORD policy to restrict any communication about cooperative agreements undergoing competition to systematic communication that insures that all competitors have equal access to information. In furtherance of this policy, do not contact or engage in discussions with NCEA employees for the purpose of seeking clarification or additional information about the research areas being competed in this solicitation.